UDC 672·82 (First Reprint NOVEMBER 1982) IS : 6321 - 1971

(Reaffirmed 2003)
(Reaffirmed 2014)

Indian Standard

SPECIFICATION FOR NEEDLES, HAND SEWING

1. Scope — Dimensions and requirements of hand sewing needles of the following types:

a) Domestic and tailors; including embroidery and darning;
b) Sail makers;
c) Glovers;
d) Saddlers;
e) Harness;
f) Packers;
g) Upholsters;
h) Palm makers;
j) Tacking; and
k) Twine

2. Material — The recommended materials for the manufacture of needles are given below:

Needles — Steel conforming to Designation T80 of Schedule VI of IS : 1570-1961 'Schedules for wrought steels for general engineering purposes' with sulphur and phosphorus, not more than 0·035 percent.

Handle (*see* Fig. 10) — Any suitable timber conforming to **5** of IS : 620-1965 'General requirements for wooden tool handles (*second revision*)'.

Washer (*see* Fig. 10) — Mild steel

2.1 The materials having characteristics equivalent or superior to those given above may also be used.

3. Shape and Dimensions — As shown in Fig. 1 to 12.

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4. Workmanship and Finish

4.1 The tip or the working end of the needle except in the case of harness needle, shall be pointed and shall be blending in shape with the body of the needle. The harness needle shall be blunt.

4.2 The eye shall be symmetrical about the centre line of the needle. The edges and inner side of the eye shall be even and smooth to prevent cutting of the thread or cord in ordinary use.

4.3 The edges of the triangular and diamond section needles shall be ground and rounded in a manner to prevent material fibres from being cut when pierced by the needles in normal sewing operation.

4.4 The surface of the needles shall be free from seams, cracks, burrs, flaws, rust and other imperfections.

4.5 Needles shall be evenly hardened and tempered to 500 to 600 *HV*.

4.6 The needles shall be finished smooth and bright and then nickel plated in accordance with Service Grade No. 2 of IS : 1068-1968 'Electroplated coatings of nickel and chromium on iron and steel (*first revision*)'.

Fasteners for Consumer Goods Sectional Committee, CPDC 22; Press Buttons, Snap Fasteners, Buttons (Excluding Plastics Buttons) and Hooks Subcommittee, CPDC 22:3 [Ref: Doc: CPDC 22(327)]

Adopted 28 October 1971	© July 1972, ISI	Gr 4

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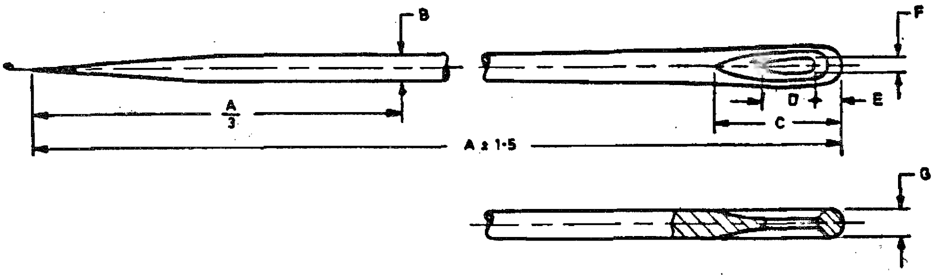
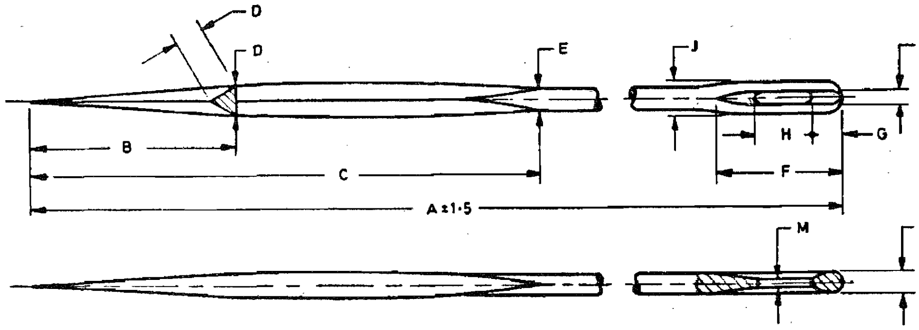


A	B	C	D	E Dia	F	G	Deflection S (see Fig. 13)
26	0·45	1·5	0·6	0·4	0·2	0·25	15
31	0·71	3·5	1·4	0·7	0·35	0·5	17
	0·40	2·5	1·0	0·5	0·25	0·3	8
35	0·90	3·5	1·4	0·7	0·5	0·7	10
	0·71	3·5	1·4	0·7	0·35	0·5	17
	0·50	3·0	1·0	0·6	0·25	0·4	18
38	0·80	4·0	1·7	0·8	0·4	0·6	16
	0·71	3·0	1·1	0·6	0·3	0·5	17
	0·355	3·5	1·5	0·7	0·3	0·3	20
41	0·80	4·0	1·7	0·8	0·4	0·6	16
	0·71	3·0	1·2	0·7	0·35	0·5	17
44	0·90	4·0	1·8	0·9	0·5	0·7	16
	0·63	4·5	2·5	0·8	0·4	0·5	17
47	1·25	4·5	2·0	1·2	0·6	0·7	15
	1·00	4·0	1·8	0·9	0·5	0·5	16
	0·63	3·5	1·4	0·7	0·3	0·4	17
56	1·25	4·5	2·0	0·9	0·6	0·7	15
	1·00	4·5	2·0	1·0	0·5	0·5	15
		8·0	4·0	2·0	0·4	0·5	15
		11·0	5·5	2·5	0·4	0·5	15
	0·63	5·5	2·5	1·0	0·3	0·4	18
60	1·00	·0	2·8	1·4	0·5	0·7	12
		11·0	5·5	2·5	0·5	0·7	12
65	1·4	13·0	6·5	3·0	1·0	0·8	12
	0·90	9·0	4·0	2·0	0·45	0·5	14
70	1·8	16·0	8·0	3·0	1·0	0·9	10
88	1·12	11·0	5·5	2·0	0·5	0·8	15

All dimensions in millimetres.

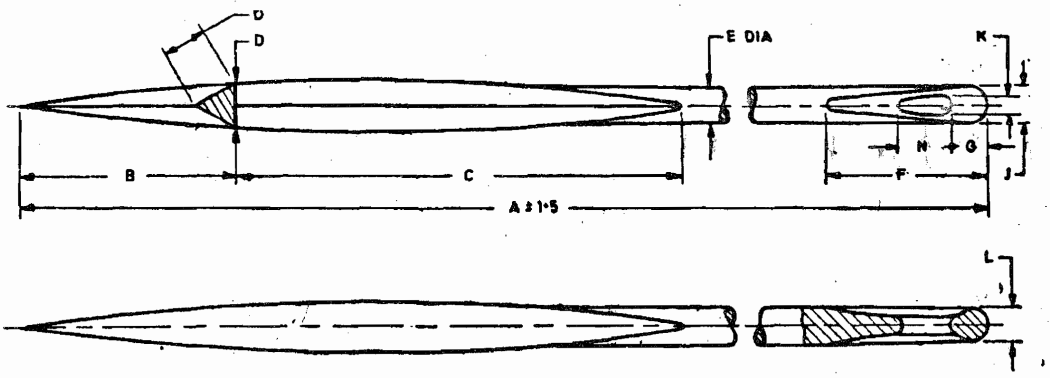
FIG. 1 NEEDLES, DOMESTIC, TAILORS, EMBROIDERY AND DARNING



A	B	C	D	E Dia	F	G	H	J	K	L	M	Deflection S (see Fig. 13)
57	12	30	1·6	1·2	8·0	1·6	3·0	1·6	0·8	0·8	0·4	5·0
60	14	35	2·0	1·6	8·5	2·0	4·0	2·0	0·8	1·2	0·8	6·0
63	16	38	2·0	1·6	10·0	2·4	5·0	2·0	1·2	1·2	0·8	6·5
66	16	41	2·0	1·6	12·0	2·4	5·0	2·0	1·2	1·2	0·8	7·0
70	16	41	2·4	2·0	12·0	2·4	5·0	2·0	1·2	1·2	0·8	6·5
76	19	44	2·8	2·0	13·5	2·8	5·5	2·4	1·2	1·6	1·2	7·0
85	25	48	3·2	2·5	14·0	2·8	5·6	2·8	1·2	1·6	1·2	7·5

All dimensions in millimetres.

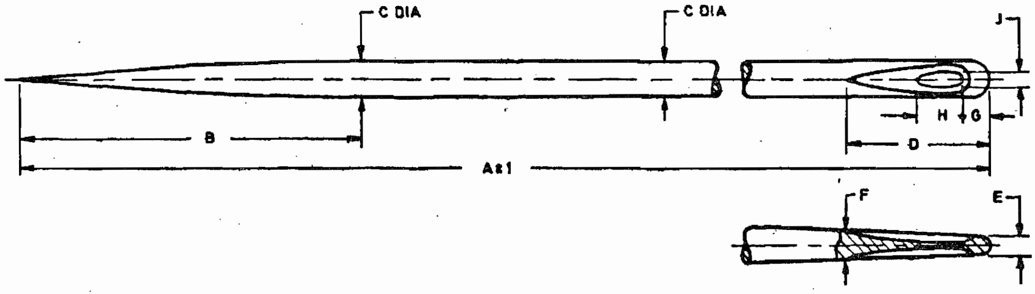
FIG. 2 NEEDLES, SAIL MAKERS



A	B	C	D	E Dia	F	G	H	J	K	L	Deflection S (see Fig. 13)
32	5	9·0	1·2	0·80	3·0	0·6	0·9	0·8	0·4	0·6	5·0
38	5	10·0	1·3	0·90	4·0	0·6	1·1	0·9	0·5	0·7	5·5
44	6	11·5	1·4	1·00	4·0	0·7	1·2	1·0	0·5	0·8	6·0
50	6	12·5	1·4	1·00	4·5	0·9	1·5	1·0	0·6	0·9	6·5
56	6	14·0	2·0	1·60	5·5	1·0	1·5	1·6	0·8	1·0	5·0

All dimensions in millimetres.

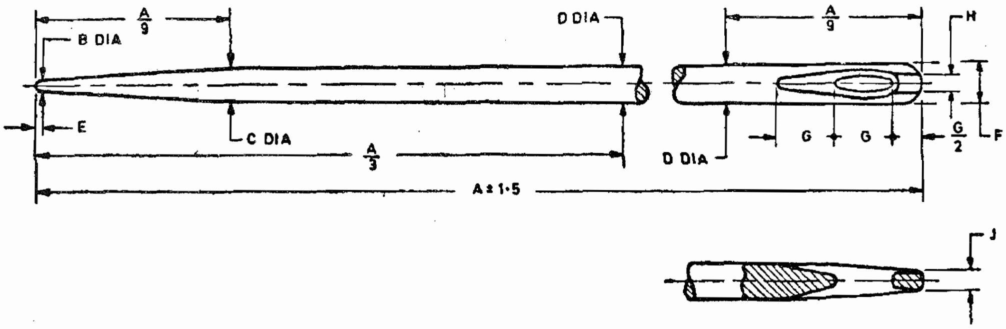
FIG. 3 NEEDLES, GLOVERS



A	B	C Dia	D	E	F	G	H	J	Deflection S (see Fig. 13)
33	9·5	0·90	4	0·5	0·6	0·8	0·9	0·38	4·0
36	9·5	1·00	4	0·5	0·6	0·8	1·25	0·45	4·5
41	9·5	1·25	4	0·6	0·7	0·9	1·25	0·50	4·0

All dimensions in millimetres.

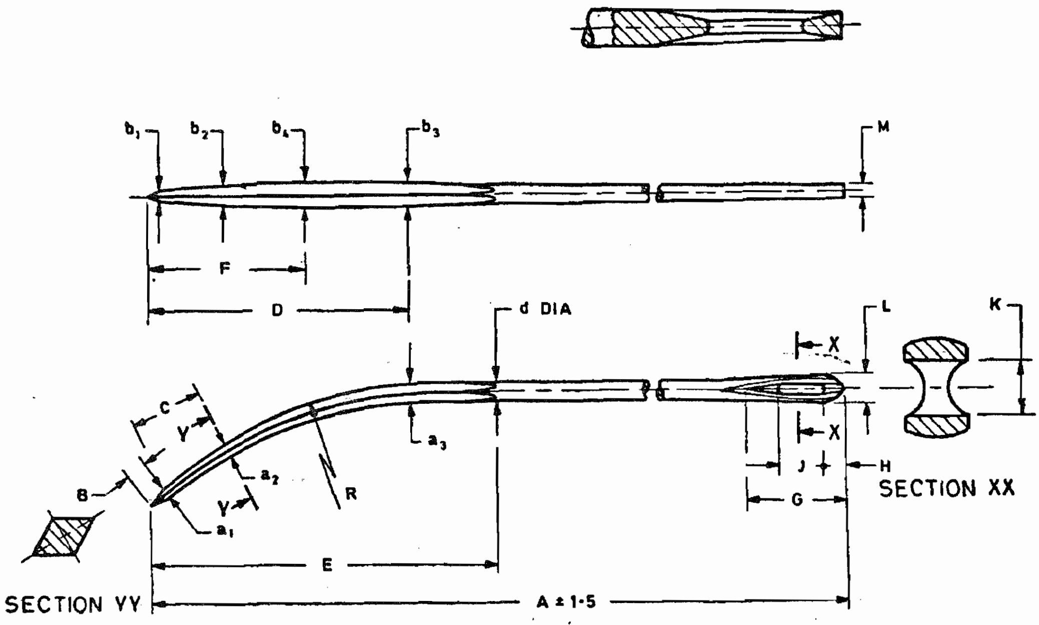
FIG. 4 NEEDLES, SADDLERS



A	*B* Dia	*C* Dia	*D* Dia	*E*	*F*	*G*	*H*	*J*	Deflection *S* (see Fig. 13)
45·0	0·3	0·8	0·90	0·20	1·0	1·4	0·3	0·4	6·5
50·0	0·4	0·9	1·00	0·25	1·1	1·6	0·4	0·5	6·0
55·0	0·6	1·0	1·25	0·40	1·3	2·0	0·5	0·8	5·5

All dimensions in millimetres.

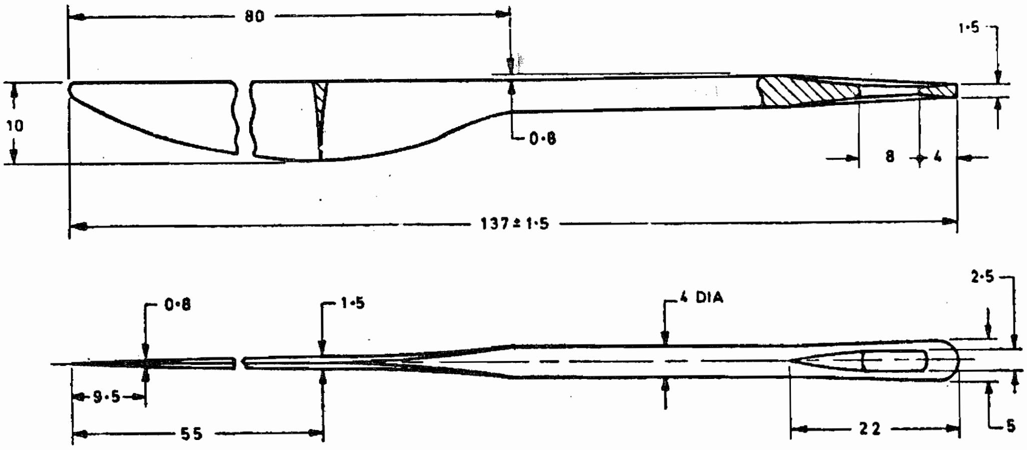
FIG. 5 NEEDLES, HARNESS



A	*B*	*C*	*D*	*E*	*F*	Cross Section							*d* Dia	*G*	*H*	*J*	*K*	*L*	*M*	*R*	Deflection *S* (see Fig. 13)
						a_1	a_2	a_3	b_1	b_2	b_3	b_4									
85	1·5	9·5	28·5	44·5	16·5	0·6	1·3	1·7	1·0	4·0	4·5	5·0	2·50	14	3·0	6·5	1·5	3·0	1·5	36	10
140	5·0	25·0	60·0	79·0	43	1·5	2·5	3·2	2·2	4·4	4·2	4·9	3·55	22	5·0	9·5	2·4	5·0	2·4	108	15
200	6·5	19·0	68·0	89·0	57	1·6	2·6	3·2	2·8	4·7	6·0	6·3	4·50	26	5·0	12·0	3·5	6·5	3·0	102	20

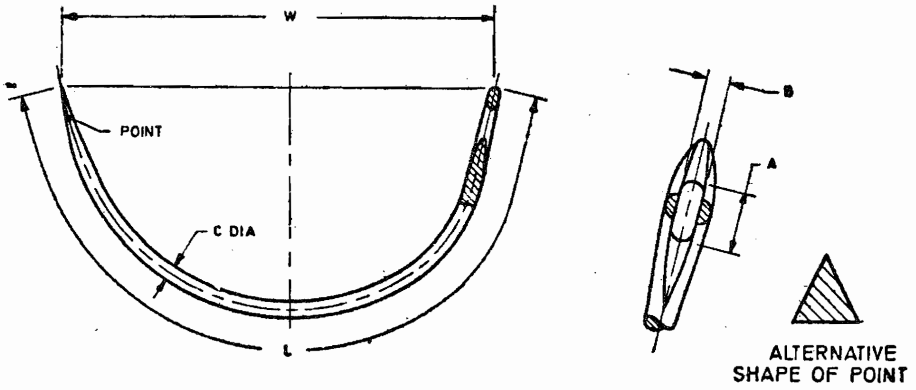
All dimensions in millimetres.

FIG. 6 NEEDLES, PACKING, BENT



All dimensions in millimetres.

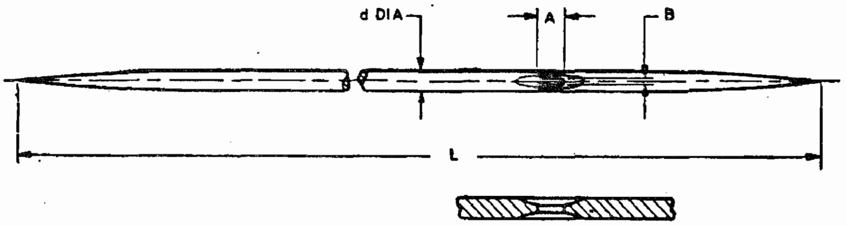
FIG. 7 NEEDLE, PACKING, CUTTING



	L	*W* (Approx)	Diameter *C*			*A*	*B*
			Extra Light	Light	Heavy		
Curved Round Point Needle	50	32	0·90	1·25	—	4·0	0·8
	62	43	0·90	1·25	—	4·0	0·8
	100	68	1·25	1·60	1·80	5·0	0·8
	112	75	—	1·60	1·80	6·0	0·8
	125	85	—	1·60	2·00	7·0	0·9
	200	130	—	1·80	2·24	8·0	0·9
Curved Triangular Point Needle	75	50	1·00	1·25	1·60	4·0	0·8
	125	85	—	1·60	2·00	7·0	0·9

All dimensions in millimetres.

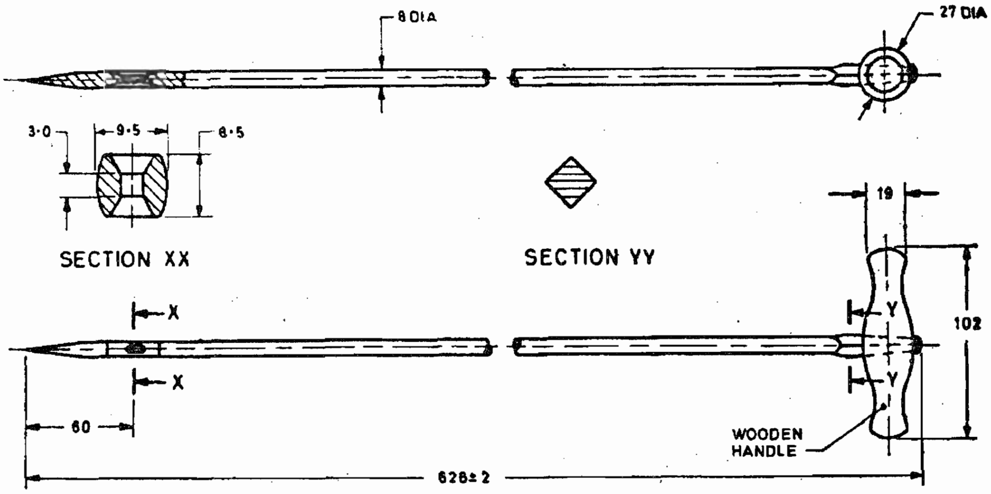
FIG. 8 NEEDLES, UPHOLSTERS, CURVED ROUND POINT OR TRIANGULAR



Length *L*	*A*	*B*	Diameter *d*			Deflection *S* (*see* Fig. 13 & 14)		
			Extra Light	Light	Heavy	Extra Light	Light	Heavy
200	4·0	1·00	—	2·0	2·24	—	27·0	24·0
250	4·0	1·25	2·0	2·24	2·50	50·0	32·5	28·5
300	5·0	1·25	2·0	2·24	2·50	50·0	42·0	36·5
350	7·0	1·50	2·0	2·24	2·50	58·0	50·0	45·0
400	7·0	1·50	2·0	2·50	2·80	70·0	55·5	47·5

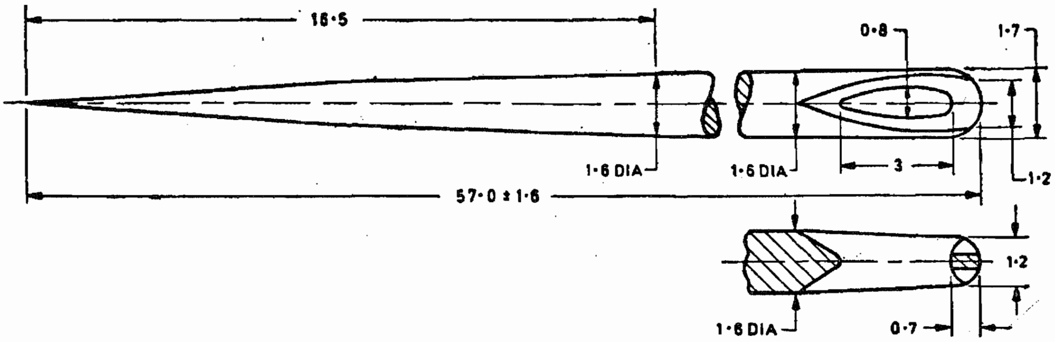
All dimensions in millimetres.

FIG. 9 NEEDLES, UPHOLSTERS, STRAIGHT, DOUBLE END



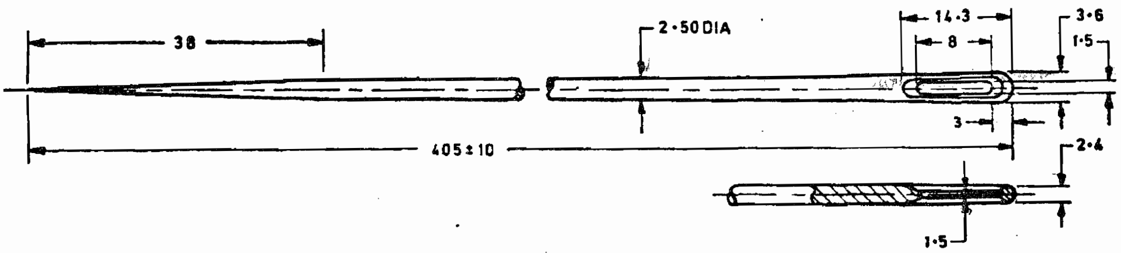
All dimensions in millimetres.

FIG. 10 NEEDLE, PALM MAKERS



All dimensions in millimetres.

FIG. 11 NEEDLE, TWINE



All dimensions in millimetres.

FIG. 12 NEEDLE, TACKING

5. Deflection Test

5.1 *All Types of Needles Except Curved Up to and Including 200 mm in Length* — The point of the needle shall be held rigidly in a vice or other means and shall be gripped not more than 5·5 mm from the point as shown in Fig. 13.

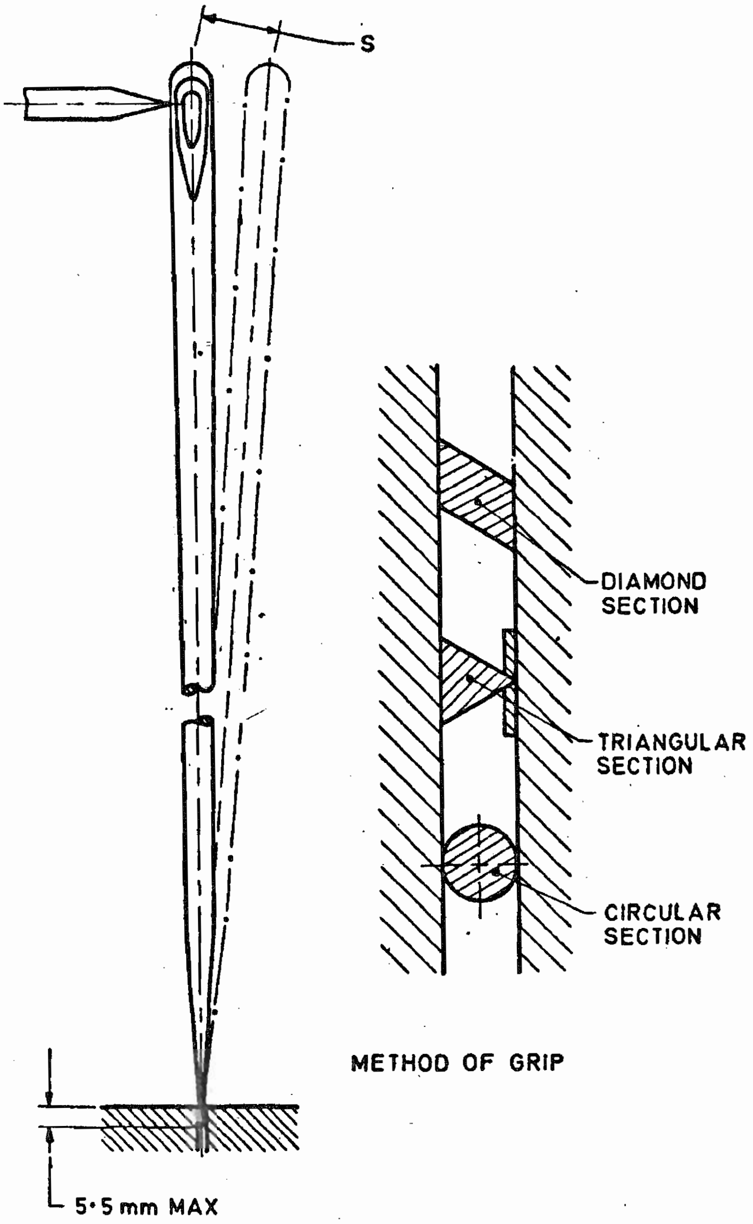


FIG. 13 DEFLECTION TEST FOR NEEDLES OF LENGTH UP TO AND INCLUDING 200 mm

5.2 Force shall be applied to the eye end of the needle as close as possible to the heel in a direction that will cause the needle to bend while the point still remains stationary. A relatively sharp edged tool, such as screw driver or chisel shall be used to apply a force. The needle shall be deflected by a distance as given in the relevant figures. This test shall be performed for each of the 3 planes represented by the triangular section and for each of the 4 planes represented by the diamond section. The needle shall not break during the test or take a permanent set on completion.

5.3 *All Types of Needles Except Curved From 201 mm Up to and Including 650 mm in Length* — The needles shall be tested as specified above except that the force shall be applied as shown in Fig. 14. Deflection of the needle shall be as given in the relevant figures. The needle shall not break during the test or take a permanent set on completion.

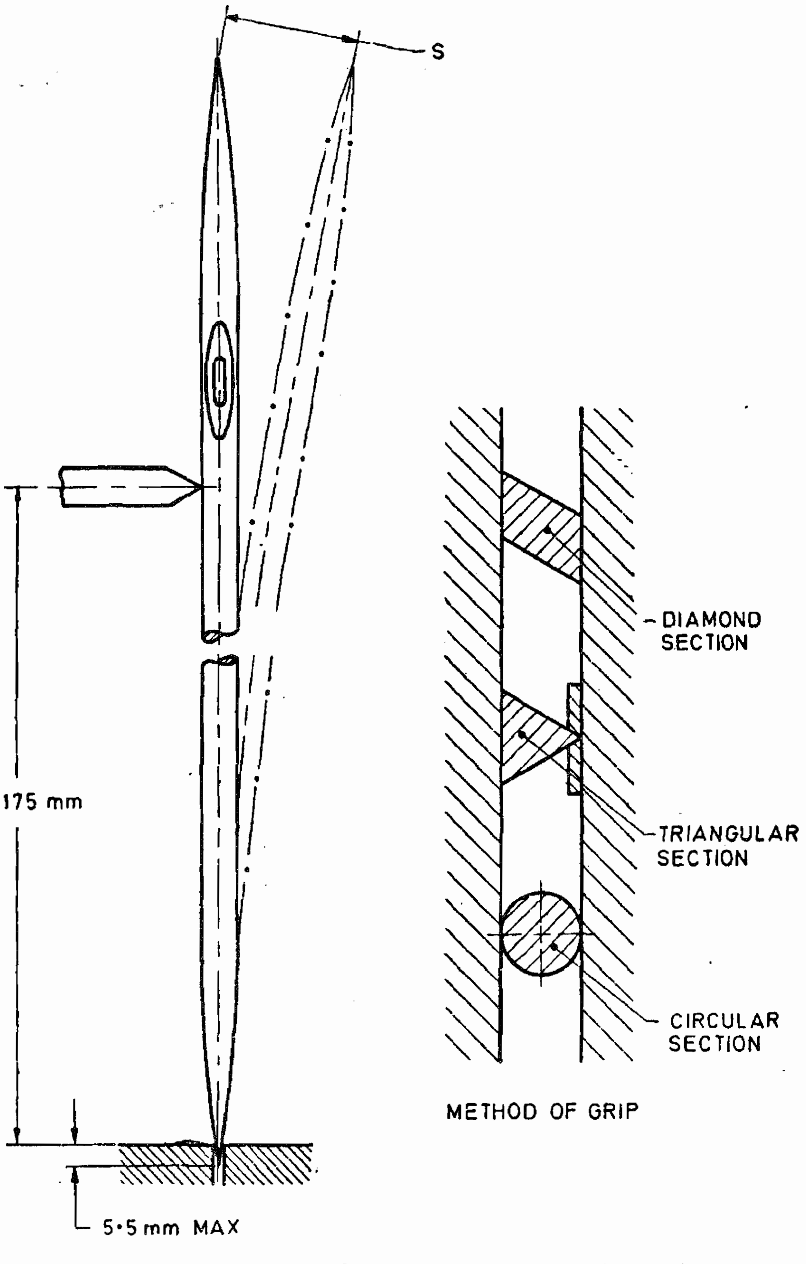


FIG. 14 DEFLECTION TEST FOR NEEDLES OF LENGTH 201 TO 650 mm

5.4 *Curved Needles* — A force shall be applied simultaneously to the point and eye of the needle causing a reduction in length *W* by 25 percent. After completion of the test the needle shall not break or take a permanent set.

6. Packing — As agreed to between the purchaser and the supplier.

7. Marking — Each packet shall be marked with the manufacturer's name, initials or trade-mark and with the size and type of the needles.

7.1 *ISI Certification Marking* — Details available from the Indian Standards Institution

Printed at Simco Printing Press, Delhi, India

AMENDMENT NO. 1 NOVEMBER 1980

TO

IS:6321-1971 SPECIFICATION FOR NEEDLES, HAND SEWING

Addendum

(*Page 5, Fig. 8, informal table, second row*) - Add the following new matter under respective columns after second row:

L	*W* (Approx)	Diameter C			*A*	*B*
		Extra Light	Light	Heavy		
78	53	-	1.4	-	6.5	0.8

(CPDC 22)

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